Gibsonville Healthy Forest Restoration Project

Socio-Economic Specialist Report

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for:
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Introduction

The management of the natural resources on the Plumas National Forest (PNF) has the potential to affect local economies. People and economies are an important part of the ecosystem. For example use of resources on the national forests generate employment and income in the surrounding communities and counties, and generates revenues returned to the Federal treasury or used to fund additional on-the-ground activities to accomplish resource management objectives. Logging companies contracted to harvest timber will likely employ local workers and provide a source of income. Merchantable timber could serve as an important input to production for local mills or generate investment in new infrastructure. These activities may also generate additional economic stimulus through expenditures made by the contracted companies for work associated and not associated with the timber sale, but covered under this Environmental Assessment.

This report delineates the affected area, assesses potential environmental justice impacts, and outlines methods and results of analyzing the economic effects of the project, including the project feasibility, financial efficiency, and economic impacts. Project feasibility and financial efficiency relate to the costs and revenues of doing the action. Economic impacts relate to how the action affects the local economy in the surrounding area.

During the scoping period for this project multiple comments were received from industry touching on subjects such as project feasibility, socio-economic benefits, supply of timber to the local industry, contract provisions, product specifications, and varying treatment types. This report was generated to provide information regarding these comments.

Contract provisions are in place to provide resource protection and adherence to best management practices (BMPs). Most are standard in Forest Service contracts and will not be changed. As long as requirements for resource protection are met, no restrictions are made on type of equipment used to get the work done.

Changing the minimum historic lower diameter from 3” to 6” was not directly analyzed in this report. Not treating this biomass would not meet the projects purpose and need. Therefore if it was not treated while equipment was on site the contractor would be held responsible for treating this fuel load in another way. Most likely by hand cutting and piling and burning the associated acres. This would be much less economical since the process is more expensive and it would force there to be a second entry. Biomass in this contract will be required removal to landings, but optional removal from project area.

Overview of Relevant Laws, Regulations, and Policies

Federal

The preparation of NEPA documents is guided by Council on Environmental Quality (CEQ) regulations for implementing NEPA [40 CFR 1500-1508]. NEPA requires that consequences to the human environment be analyzed and disclosed. The extent to which these environmental factors are analyzed and discussed is related to the nature of public comments received during scoping. NEPA does not require a monetary benefit-cost analysis. If an agency prepares an economic efficiency analysis, then one must be prepared and displayed for all alternatives [40 CFR 1502.23].

Office of Management and Budget (OMB) Circular A-94 promotes efficient resource use through well-informed decision making by the Federal Government. It suggests agencies prepare an efficiency analysis as part of project decision making, and prescribes “present net value” as the criterion for the efficiency analysis.

The development of timber sale programs and individual timber sales is guided by agency direction found in Forest Service Manual (FSM) 2430. Forest Service Handbook (FSH) 2409.18 guides the financial and, if applicable, economic efficiency analysis for timber sales.

Many of the costs and benefits associated with a project are not quantifiable in financial terms for example, the benefit to wildlife from habitat improvement from a project. These costs and benefits are described qualitatively in the indicated resource sections of this document.
For the purposes of complying with the NEPA, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are qualitative considerations.
Additionally, the social and economic environment of the Plumas National Forest is described in the Forest's 1988 LRMP, as amended by the 1999 HFQLG FEIS and ROD; the 2003 HFQLG FSEIS and ROD; and 2004 SNFPA FSEIS and ROD. This economic analysis is not designed to model all the economic factors used in an intensive and highly complex timber sale appraisal process. This economic analysis takes a less complex, but consistent and systematic approach to display the relative differences in financial efficiency (i.e., relevant revenues and costs) between the alternatives being proposed in the environmental analysis.

State

Forest contributions to local county revenues come from three sources: (1) Payment in Lieu of Taxes, (2) timber yield taxes, and (3) Receipt Act payments or payments from the Secure Rural Schools and Community Self-Determination Act of 2000. Of these, Receipt Act or Secure Rural Schools and Community Self-Determination Act payments are by far the most significant, in terms of total contributions to each county, and therefore are most likely to be affected by Forest land management decisions.

Payment in Lieu of Taxes

Payments in Lieu of Taxes are administered by the Bureau of Land Management and apply to many different types of federally-owned land, including National Forest System lands. Payments in Lieu of Taxes payments compensate counties for the loss of property tax revenues due to non-taxable federal land within the county. Payments are made annually and are based on local population, Federal acreage in the county, and other federal payments during the preceding fiscal year. The minimum payment is 75 cents per entitlement acre. The funds may be used by the county for any purpose. The Forest has no control over the disbursement of these funds, and the amount disbursed every year is unaffected by Forest land management decisions.

Timber Yield Taxes

The second source of revenues to local government is the timber yield tax, administered by the State Board of Equalization. This tax is not paid by the Forest. Instead, it is paid by private timber operators, based on the amount of timber harvested in a given year on both private and public lands. The tax is 2.9 percent of the value of the harvested timber. The taxes are collected by the State, and approximately 80 percent is returned to the counties in which the timber was harvested. Decisions about the amount of timber to be offered for sale each year on the Forest can affect the amount of revenues disbursed to the counties.

Receipt Act

Receipt Act payments are distributed pursuant to the National Forest Management Act (Public Law 94-588). Under this law, 25 percent of National Forest revenues are allocated to the State in which the Forest is situated. The amount returned is based on the National Forest acreage within each county. According to State law, Receipt Act funds must be divided evenly between public schools and public roads of the county or counties in which the National Forest is located, and may not be spent on anything else. Receipt Act payments are based on 25 percent of the total revenues collected from

timber, grazing, land use, recreation, power, minerals, and user fees. Within the eleven western states, however, payments are based on 50 percent of revenue from grazing. Historically, at least 90 percent of total revenues have come from timber sale receipts. As a result, the amount of money available for distribution each year fluctuates widely, depending on the amount of timber harvested on National Forests.

Secure Rural Schools and Community Self-Determination Act

Congress passed the Secure Rural Schools and Community Self-Determination Act in 2000, offering counties an alternative to the Receipt Act. Under the Receipt Act, a state's three highest payment amounts between 1986–1999 are averaged to arrive at a "compensation allotment" or "full payment amount." A county may choose to continue to receive payments under the Receipt Act or to receive its share of the state's full payment amount under the Secure Rural Schools and Community Self-Determination Act. Full payment amounts for Butte, Lassen, Plumas, Sierra, and Yuba Counties for years 2001-2011 are shown in table 1.

Table 1: Secure Rural Schools and Community Self-Determination Act full payment amounts to counties for years 2001 - 2011.

Year	Butte	Lassen	Plumas	Sierra	Yuba	Totals
2001	$866,419	$3,751,241	$7,024,648	$1,788,350	$231,268	$13,661,926
2002	$873,350	$3,781,250	$7,080,847	$1,802,657	$233,118	$13,771,222
2003	$883,830	$3,826,626	$7,165,816	$1,824,289	$235,915	$13,936,476
2004	$895,320	$3,876,372	$7,258,972	$1,848,005	$238,982	$14,117,651
2005	$915,912	$3,965,528	$7,425,928	$1,890,509	$244,479	$14,442,356
2006	$925,071	$4,005,183	$7,500,187	$1,909,414	$246,924	$14,586,779
2007	$923,173	$3,996,963	$7,484,795	$1,905,495	$246,417	$14,556,843
2008	$832,565	$3,604,665	$6,750,168	$1,718,472	$222,231	$13,128,101
2009	$749,308	$3,244,198	$6,075,151	$1,546,625	$200,008	$11,815,290
2010	$675,302	$2,923,783	$5,475,136	$1,393,872	$180,254	$10,648,347
2011	$536,109	$2,321,134	$4,346,602	$1,106,567	$143,100	$8,453,512

Counties can receive variable, revenue-dependent payments under the Receipt Act or receive stable funding for local schools and roads under Secure Rural Schools and Community Self-Determination Act. The legislation promotes local involvement, decisions, and choice by creating well-balanced resource advisory committees that recommend forest projects to the Secretary of the USDA, or advise counties on county project proposals. Counties that elect to receive the full payment amount under Secure Rural Schools and Community Self-Determination Act and receive more than $100,000 are required to allocate 15 to 20 percent of their funding to projects under Title II or Title III.

Like traditional 25 percent funds, Title I funds are expended for public school and roads. Title II funds are allocated for projects on federal lands or projects that benefit federal lands. Resource Advisory Committees are established to determine Title II fund distribution. Title III funds are allocated for county

projects that include search and rescue, community service work camps, easement purchases, forest-related education opportunities, fire prevention and county planning, or cost-share for urban community forestry projects. Secure Rural Schools and Community Self-Determination Act Title I, II, and III funds for 2011 for the five counties containing Plumas National Forest System lands are shown in table 2.

Table 2: Secure Rural Schools and Community Self-Determination Act Title I, II, and III payment amounts to counties for year 2011.

County	Full Payment Amount	Title I Funds	Title II Funds	Title III Funds
Butte	$536,109	$428,887	$69,694	$37,528
Lassen	$2,321,134	$1,972,964	$185,691	$162,479
Plumas	$4,346,602	$3,694,612	$347,728	$304,262
Sierra	$1,106,567	$940,582	$127,255	$38,730
Yuba	$143,100	$121,635	$0	$21,465
Total	$8,453,513	$7,158,680	$730,368	$564,464

Authority for the Forest Service to make the payments under the Secure Rural Schools Act (SRS Act) was reauthorized by section 524 of P.L. 114-10 and signed into law by the President on April 16, 2015. Section 524(a)(2) requires that SRS Act payments for FY 2014 be made not later than 45 days after enactment. Updated projected payment reports (ASR 10-1, ASR 10-3, and ASR 18-1) are available on the payments and receipts page. In total, approximately $285 million in Forest Service authorized SRS funding will benefit 41 states and the Commonwealth of Puerto Rico in support of local schools and roads and for other purposes.

Affected Environment

The Gibsonville Healthy Forest Restoration Project is located on the Feather River Ranger District of the PNF. The PNF is located in five different counties. The percentage of Plumas National Forest land in local counties is shown in table 3.

Table 3: Percentage of Plumas National Forest system lands by county.[a]

County	County Acres	Beckwourth Ranger District (ac)	Feather River Ranger District (ac)	Mount Hough Ranger District (ac)	Total PNF[b] Land in County (ac)	PNF[b] Land within County (percent)
Butte	1,072,708	0	143,517	0	143,517	13.4
Lassen	3,022,136	39,686	0	1,635	41,320	1.4
Plumas	1,672,778	448,365	183,210	579,196	1,210,771	72.4
Sierra	615,514	14,794	33,522	0	48,316	7.8
Yuba	411,695	0	33,734	0	33,734	8.2
Totals	6,794,830	502,844	393,984	580,831	1,477,659	21.7

Notes:

a. Based on Geographic Information System (GIS) data.

b. PNF = Plumas National Forest.

Existing Condition / Economic Impact Area

The following information and tables referring to the existing condition within the affected environment has been compiled using the Economic Profile System (EPS) developed and run by Headwaters Economics. EPS uses published statistics from federal data sources, including Bureau of Economic Analysis and Bureau of the Census, U.S. Department of Commerce; and Bureau of Labor Statistics. U.S. Department of Labor.

The economically affected analysis area is referred to in this report as the economic impact area. The Forest Service Economic and Social Analysis Handbook states that an economic impact area "should be defined as (1) a functional economic unit of a size appropriate to the [project] and (2) an area that includes most of economic factors that are most directly affected by the [project]." It goes on to state that "a practical limitation is that economic impact areas must be some combination of individual counties."

Following this handbook direction the subsequent points were considered in determining the economic impact area for this project:

- The project area is located in Sierra County, which would receive any Forest contributions to local county revenues.
- The primary wood product being harvested is sawtimber and will most likely be transported to Quincy in Plumas County (the nearest sawmill capable of handling the volume of product).
- Contractors and sub-contractors performing the project work will likely be local residents of Plumas County.

Population

Table 4 shows that the population of the analysis area was 18,409 in 2015. The analysis area has experienced population regression of 11 percent since 2000 compared to a national rate increase of 14 percent over the same period.

Table 4: Population, 2000-2015

	Impact Analysis Area (Plumas Co)	U.S.
Population (2015)	18,409	321,418,820
Population (2000)	20,754	282,162,411
Population Change (2000-2015)	-2,345	39,256,409
Population Percent Change (2000-2015)	-11%	14%

- Plumas County has been chosen as the Impact Analysis Area as it is the county most likely to be affected by the project

Employment and Economic Well-Being

From 2000 to 2015, total employment for full- and part-time jobs including proprietors decreased for the analysis area by 8 percent (from 10,440 to 9,638 jobs) compared to a 15 percent increase for the United States. Of these jobs 56.5 percent were in services (Consists of employment in the following sectors: Utilities, Wholesale Trade, Retail, Real Estate, Health Care, Arts, Recreation, etc.), 24.6 percent were held in Government positions, and 17.9 percent were in Non-services related positions; 1.6 percent of them being in Forestry, fishing, and ag. Services. The unemployment rate for Plumas County was 10.4 percent in 2015 compared to 5.3 percent for the United States.

Total personal income (TPI) and per capita personal income (PCPI) provide useful measures of economic well-being. The analysis area saw a 34 percent increase in real (adjusted for inflation) TPI from 2010 to 2015, gaining from $35,537 in 2010 to $47,615 in 2015. Per capita income is considered one of the most important measures of economic well-being. However, this measure can be misleading. Per capita income is total personal income divided by population. Because total personal income includes non-labor income sources (dividends, interest, rent, and transfer payments), it is possible for per capita income to be relatively high due to the presence of retirees and people with investment income. Age distribution for Plumas County is as follows: Under 18 represents 17.3 percent of the population, 18 –64 represents 59.5 percent of the population, and 65/over represents 23.2 percent of the population.

Federal Land

In some geographic areas, particularly in the West, a large proportion of the land base can be federal public lands. Understanding the makeup of the land base in an area is important because some actions on federal lands may affect the local economy, particularly if federal lands are a large portion of the land base. Additionally, some federal public lands prohibit most forms of commercial use and development. These include National Parks, Wilderness, and National Monuments, for example. Since these lands are managed primarily for their non-commercial values (e.g. scenery, wildlife, recreation), they potentially play a different economic role than public lands more commonly associated with commodity sectors. Geographic areas with federal public lands receive payments from the federal government related to these lands (e.g. Payments in Lieu of Taxes, the 25% Fud, Secure Rural Schools, and others). If these payments are a significant portion of the local county's budget, then activities on public lands may have the potential to affect the fiscal well-being of a county. Depending on the type of payments a county receives, the fiscal health of the county may also be dependent on the level of appropriations from Congress.

Table 5shows that 71.3 percent of the land in the analysis area is under federal ownership. Almost all of this federal land is administered by the Forest Service.

Table 5: Land Ownership- As a percent of total, 2016

	Impact Analysis Area (Plumas Co)	**U.S.**
Private Lands	27.8%	59.3%
Federal Lands (Total)	71.3%	28.2%
Federal Lands (U.S. Forest Service)	69.8%	8.4%
State Lands	0.7%	8.4%
Tribal Lands	0%	2.9%
City, County, Other	0%	0.3%

Timber Employment

To understand the potential impact of proposed land management practices, it is important to grasp the relative size of the timber industry, its components, and how these have changed over time. Some important issues to consider are whether a proposed management action would stimulate growth or decline in the industry. In some geographies the timber industry can be a significant driver in the

economy. If it is, other sectors of the economy, as well as total employment and total personal income, will likely follow trends in the timber industry. It is important to know whether this is the case because if employment in other sectors fluctuate with the timber industry, then management actions on public lands may affect more than the timber industry itself. If, on the other hand, jobs in the rest of the economy are growing independent of trends in the timber industry, then management actions that potentially affect the timber industry may have impacts that are limited to that industry. The former has proven to be true in the analysis area for the proposed action. From 1998 to 2013, timber employment shrank from 620 to 461 jobs, a 25.6 percent decrease. At the same time non-timber employment shrank from 3,831 to 3,134 jobs, an 18.2 percent decrease.

Environmental Effects

Methodology

This economic analysis focuses on those revenues and treatment costs associated with implementing fuel reduction treatments and forest health activities in the Gibsonville Healthy Forest Restoration Project area. The purpose of this economic analysis is to present the potential revenues and costs associated with each of the alternatives for comparison purposes. This analysis does not include monetary values assigned to resource outputs such as wildlife, watersheds, soils, recreation, visual quality, or fisheries. It is intended only as a relative measure of differences between alternatives based on direct costs and values used.

A. Project Feasibility

Project feasibility is used to determine if a project is feasible, that is, will it sell, given current market conditions. The determination of feasibility relies on a residual value (stumpage= revenues – costs) feasibility analysis that uses local delivered log prices and stump to mill costs to determine if the project is feasible. The appraised stumpage rate from the analysis is compared to the base rate (a legally required rate essential to cover regeneration plus minimum return to the Federal treasury). The project is considered to be feasible if the appraised stumpage rate exceeds the base rates. If the feasibility analysis indicates that the project is not feasible, the project may need to be modified. Infeasibility indicates an increased risk that the project may not attract bids, may not be implemented, or may require supplemental funding. The amount of timber harvested is a critical component of sale feasibility. This is expressed in terms of volume and the unit of measure used for this analysis is thousand board foot (MBF). Costs or values associated with the timber harvest are expressed in terms of dollars per MBF of sawtimber ($/MBF). For example, the base rate value for this sale is $6.00/MBF for red fir and white fir, $10.00/MBF for Ponderosa pine and sugar pine, and $10.00/MBF for Incense cedar. Timber harvest values used in this economic analysis/project feasibility report were based on the pond values (delivered log prices) of local mills from the State Board of Equalization. Treatment or management costs associated with harvesting, biomass removal, road improvements, fuels treatments, and temporary road building/removal were based on the latest timber sale appraisal values.

B. Economic Impacts (Jobs and labor income)

Employment opportunities can have direct, indirect, or induced effects on the local economy. Direct effects are associated with the primary producer. For example, the manufacturing of lumber from the Gibsonville Healthy Forest Restoration Project would have a direct effect on employment opportunities. Indirect effects account for employment in service industries that serve the lumber manufacturer. These industries may include logging, trucking, and fuel

suppliers. Induced effects are driven by wages, and are circulated through the local economy for food, housing, transportation, and other living expenses. The sum of direct, indirect, and induced effects is the total economic impact in terms of jobs and monetary outputs. This report assumes that 10 – 15 direct jobs are created per million board feet of timber harvested. The restoration and fuel work would support additional direct and indirect employment. There are an additional estimated 1.4 indirect jobs for every full time field job. All jobs are equivalent to year-around employment.

C. Environmental Justice

As stated in Executive Order 12898, it is required that all federal actions consider the potential of disproportionate effects on minority and low-income populations in the local region. The principals of environmental justice require agencies to address the equity and fairness implications associated with Federal land management actions. The Council on Environmental Quality (CEQ) provides the following definitions in order to provide guidance with the compliance of environmental justice requirements:

- "Minority population: Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis…"
- "Low-income population: Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect."

Alternative A – No Action

The no-action alternative would not harvest timber, implement BMP's on haul routes, return fire to the landscape or take other fuels reduction actions and, therefore, incurs no financial costs. It would also produce no revenue and have no positive effects on jobs or income.

The no-action alternative would result in a negative effect on the local industries that depend on service contracts or a steady supply of timber, as well as counties that use timber yield taxes to fund county programs. Local industries would have notably reduced opportunities related to forest management activities such as timber harvesting and forest health projects. Additionally, the local economy would not receive benefits from associated employment, such as in food, lodging, and transportation businesses. The unemployment rate could potentially stay constant through the year, at double the national unemployment rate. The income loss for families would trickle through the local economy affecting many of the local industries in a negative way.

Alternative B (Proposed Action) and C (Owl Action)

A. Project Feasibility

The estimation of project feasibility was based on the Region 5 sale feasibility analysis spreadsheet (table 6), which is a residual value timber appraisal. This approach takes into account stump-to-mill costs, other logging costs, and non-harvest project costs.

The volume of timber harvested is directly related to the number of acres harvested and the treatments proposed in each cutting unit.

- **Stump-to-mill costs**- include the direct cost of cutting, skidding, processing, loading, and hauling the logs to the mill. The stump-to-mill costs are most affected by the type of logging system (ground-based, ground lead, or skyline) required to cut and skid the trees, the concentration of volume per acre, the skidding distance, biomass removal requirements, and the haul distance from the cutting unit to the sawmill.
- **Other logging costs-**include other work required in the timber sale contract related to timber removal and NEPA requirements. The other logging costs for this project are road maintenance (T-specs), surface replacement, BD costs, and temporary roads, stump treatment, mastication, hand pile and associated burning treatments.
- **Minimum advertised stumpage rate-**a weighted average of minimum rates (the lowest rates of payment for timber that are authorized by the Forest Service) was assumed for this project. No reforestation is required under this project so base rates will remain the same as minimum rates. A 2.9% yield tax was also added as a "cost" to the logger.

Table 6: Economic Feasibility Analysis Report

	Alt B (Proposed Action)		**Alt C (Owl Action)**		**Difference**
	Volume mbf	Value $	Volume mbf	Value $	$ +/-
Timber value	4,142	1,069,836	3,214	870,316	-199,520
Total harvest cost		-452,982		-351,748	+101,234
Net harvest value		616,854		518,568	-98,286
Total Non-harvest cost (service work)		-595,500		-669,600	-74,100
Total Project Value		21,354		-151,032	-172,386
Result		Feasible		Unfeasible	

B. Economic Impacts (Jobs and Labor Income)

The analysis calculated the jobs and labor income associated with the processing of timber products harvested and conducting required design criteria, as well as all project activities. If the proposed action is implemented an estimated 86 new full time jobs would be available during the projects lifetime. Assuming an average income of $43,000 the total employee-related income entering the local economy would be $3,710,728.Under the owl action 75 jobs would be produced with $3,244,436 entering the economy. This assumes all work items will be performed under this action, but since the action is unfeasible some jobs may be lost due to the dropping of required items.

C. Environmental Justice

According to the CEQ's Environmental Justice Guidelines for NEPA, "minority populationsshould be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of

geographic analysis." Table 7 shows that the total share of all minority populations represented less than 15 percent of the population in each county and the analysis area in 2014. Thus the U.S. Census data suggest minority populations within the analysis area do not meet the CEQ's Environmental Justice criterion.

Table 7: Percent of Total Population by Race, 2014

	Impact Analysis Area (Plumas Co)	**U.S.**
White alone	89.6%	73.8%
Black or African American alone	0.7%	12.6%
American Indian alone	2.8%	0.8%
Asian alone	1.0%	5.0%
Native Hawaiian & Other Pacific Is. Alone	0.8%	0.2%
Some other race alone	1.2%	4.7%
Two or more races	3.9%	2.9%

CEQ guidance on identifying low-income populations states that "…agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (e.g., migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect." Following the Office of Management and Budget's Directive 14, the Census Bureau uses a set of income thresholds that vary by family size and composition to detect who is poor. If the total income for a family or an unrelated individual falls below the relevant poverty threshold, then the family or an unrelated individual is classified as being "below the poverty level." Persistent poverty status requires a county to have experienced an individual poverty rate in excess of 20 percent for several Census years. In the 2010 – 2014 period, Plumas county CA had the highest estimated percent of individuals living below poverty (15.9%) and the U.S. had (15.6%). Based on these data, the characteristic of persistent poverty is not present in the analysis area.

References

Council on Environmental Quality. 2005. Regulations for Implementing the Procedural Provision ofthe National Environmental Policy Act, 40 CFR Parts 1500-1508

Federal Register. 1994. Presidential Documents- Vol. 59 No. 32. Executive Order 12898. Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Office of Management and Budget. 1992. Circular No. A-94 Revised

Office of Management and Budget. 1978. Statistical Policy Directive No. 14, https://www.whitehouse.gov

USDA Forest Service. 1988 Plumas National Forest Plan

USDA Forest Service. 2002. Forest Service Handbook, 2409.18- Timber Sale Preparation Handbook

USDA Forest Service. 2009. Forest Service Manual, 2400- Timber Management

Economic Profile System – Headwaters Economics. www.headwaterseconomics.org